universität wien

Fakultät für Mathematik

Außerordentliches Mathematisches Kolloquium

EINLADUNG

Prof. Dr. Yuehaw Khoo *(University of Chicago)*

„High-dimensional linear algebra “

„High-dimensional linear algebra “

Abstract:
Numerical linear algebra has been a cornerstone of scientific computing in the 20th century, particularly for solving 1D–3D partial differential equations. Yet, when faced with high-dimensional problems, traditional linear-algebraic approaches encounter the curse of dimensionality, prompting a shift toward highly nonlinear approximations—most notably deep neural networks trained via non-convex optimization. Based on tensor-networks, I will highlight how simple linear algebraic operations remain surprisingly powerful in modern high-dimensional contexts such as artificial intelligence and many-body physics. These techniques give rise to a suite of optimization-free algorithms that sidestep the difficulties of non-convexity with optimal run time.

Montag, 13. Oktober 2025,
15:00 Uhr, HS 09, 1 OG.
Fakultät für Mathematik
Oskar-Morgenstern-Platz 1

Vladmir Kazeev
Radu Bot